

Amendments to the Claims:

1. **(Original)** A pedestrian navigation device for navigating the route of a pedestrian, comprising:

- position information reception means for obtaining current position information;
- position information analysis means for analyzing said current position information received by the said position information reception means and calculating the current position;
- map information storage means for storing map information;
- central processing means for calculating current position display information, based on said current position calculated by said position information analysis means, and on said map information stored by said map information storage means; and,
- display means for displaying said current position display information calculated by said central processing means; and characterized in that

said central processing means has pedestrian history information comprising a reference direction α indicating the direction of a past movement route and a reference distance β indicating a prescribed distance, takes the current position at the start of navigation to be reference point a_0 , and, upon receiving the current position a_i after a prescribed time from said position information analysis means, calculates the distance La_{0ai} between said reference point a_0 and said current position a_i , and when

$$\beta > La_{0ai} \quad (1)$$

corrects said current position a_i in the direction of said reference direction α and calculates current position display information, but when

$$\beta \leq La_{0ai} \quad (2)$$

corrects said current position a_i in the direction of said reference direction α and calculates current position display information, and in addition takes the corrected position of said current position a_i to be the new reference point, and takes the direction from the previous reference point a_0 to the new reference point to be the new reference direction α .

2. **(Original)** A pedestrian navigation device for navigating the route of a pedestrian, comprising:

- position information reception means for obtaining current position information;
- position information analysis means for analyzing said current position information received by the said position information reception means and calculating the current position;
- map information storage means for storing map information;
- central processing means for calculating current position display information, based on said current position calculated by said position information analysis means, and on said map information stored by said map information storage means; and,
- display means for displaying said current position display information calculated by said central processing means; and characterized in that

said central processing means receives the current position a_i from said position information analysis means at prescribed intervals, and when the absolute value of the difference between the direction angle A_i from the preceding current position a_{i-1} to the present current position a_i and the reference angle A is such that

$$\alpha_0 \text{ (tolerance angle)} \geq |A - A_i| \quad (3)$$

calculates current position display information from said current position a_i , and takes the direction angle A_i to be the new reference angle A .

3. **(Original)** A pedestrian navigation device for navigating the route of a pedestrian, comprising:

- position information reception means for obtaining current position information;
- position information analysis means for analyzing said current position information received by the said position information reception means and calculating the current position;
- map information storage means for storing map information;

central processing means for calculating current position display information, based on said current position calculated by said position information analysis means, and on said map information stored by said map information storage means; and,

display means for displaying said current position display information calculated by said central processing means; and characterized in that

said central processing means takes the current position at the start of navigation to be the reference point a_0 , receives the current position a_i at prescribed intervals from said position information analysis means, calculates the distance La_{0ai} between said reference point a_0 and the current position a_i , and when

$$\beta \text{ (reference distance)} > La_{0ai} \quad (4)$$

calculates current position display information from said current position a_i , but when

$$\beta \text{ (reference distance)} \leq La_{0ai} \quad (5)$$

calculates current position display information from said current position a_i , and in addition takes said current position a_i to be the new reference point, and takes the direction from the previous reference point a_0 to the new reference point a_i to be the new reference direction α .

4. **(Original)** The pedestrian navigation device according to Claim 3, characterized in that said central processing means takes the current position at the start of navigation to be the reference point a_0 , receives the current position a_i at prescribed intervals from said position information analysis means, calculates the distance La_{0ai} between said reference point a_0 and said current position a_i , and when

$$\beta \text{ (reference distance)} > La_{0ai} \quad (4)$$

calculates current position display information from said current position a_i , but when

$$\beta \text{ (reference distance)} \leq La_{0ai} \quad (5)$$

calculates current position display information from said current position a_i , and in addition takes the current position a_1 next calculated after said reference point a_0 to be the new

reference point, and takes the direction from the previous reference point a_0 to said current position a_i to be the new reference direction α .

5. **(Original)** A pedestrian navigation device for navigating the route of a pedestrian, comprising:

position information reception means for obtaining current position information;

position information analysis means for analyzing said current position information received by the said position information reception means and calculating the current position;

map information storage means for storing map information;

central processing means for calculating current position display information, based on said current position calculated by said position information analysis means, and on said map information stored by said map information storage means; and,

display means for displaying said current position display information calculated by said central processing means; and characterized in that

said central processing means has a reference direction α indicating the direction of a past movement route and a prescribed tolerance angle γ , takes the current position at the start of navigation to be reference point a_0 , and, upon receiving the current position a_i after a prescribed time from said position information analysis means, calculates the direction $a_0 \rightarrow a_i$ from said reference point a_0 to said current position a_i , and

(a) if the direction $a_0 \rightarrow a_i$ is outside the range of the tolerance angle γ from the reference direction α , uses current position display information calculated using said reference point a_0 without modification; but

(b) if the direction $a_0 \rightarrow a_i$ is within the range of the tolerance angle γ from the reference direction α , calculates current position display information using said current position a_i , and moreover takes the corrected position of said current position a_i to be the new reference point, and takes the direction from the previous reference point a_0 to the new reference point a_i to be the new reference direction α .

6. **(Original)** A pedestrian navigation device for navigating the route of a pedestrian, comprising:

- position information reception means for obtaining current position information;
- position information analysis means for analyzing said current position information received by the said position information reception means and calculating the current position;
- map information storage means for storing map information;
- central processing means for calculating current position display information, based on said current position calculated by said position information analysis means, and on said map information stored by said map information storage means;
- display means for displaying said current position display information calculated by said central processing means; and,
- direction measurement means for measuring the direction of advance; and characterized in that

said central processing means takes the current position at the start of navigation to be reference point a0, and upon receiving the current position a1 after a prescribed time from said position information analysis means, corrects said current position a1 in said direction of advance measured by said direction measurement means and calculates current position display information, and in addition takes the corrected position of said current position a1 to be the new reference point.

7. **(Original)** A pedestrian navigation device for navigating the route of a pedestrian, comprising:

- position information reception means for obtaining current position information;
- position information analysis means for analyzing said current position information received by the said position information reception means and calculating the current position;
- map information storage means for storing map information;

central processing means for calculating current position display information, based on said current position calculated by said position information analysis means, and on said map information stored by said map information storage means;

display means for displaying said current position display information calculated by said central processing means; and,

direction measurement means for measuring the direction of advance; and characterized in that

said central processing means takes the current position at the start of navigation to be reference point a_0 , and upon receiving the current position a_i after a prescribed time from said position information analysis means, calculates the direction $a_0 \rightarrow a_i$ from said reference point a_0 to said current position a_i , and

(a) if the direction $a_0 \rightarrow a_i$ is outside the range of the tolerance angle γ from said direction of advance measured by said direction measurement means, uses current position display information calculated using said reference point a_0 without modification; but

(b) if the direction $a_0 \rightarrow a_i$ is within the range of the tolerance angle γ from said direction of advance measured by said direction measurement means, calculates current position display information using said current position a_i , and in addition takes the corrected position of said current position a_i to be the new reference point.

8. **(Currently amended)** The pedestrian navigation device according to Claim 6 ~~or Claim 7~~, characterized in that said direction measurement means is an electronic compass.

9. **(Currently amended)** The pedestrian navigation device according to Claim 6 ~~or Claim 7~~, characterized in that said direction measurement means is a gyrosensor.

10. **(Currently amended)** The pedestrian navigation device according to ~~any one of Claims 1 through 7~~ Claim 1, characterized in that said position information reception means obtains current position information from a GPS (Global Positioning System).

11. **(Currently amended)** A program for causing a portable terminal to navigate a pedestrian route, which realizes in the portable terminal the functions of the pedestrian navigation devices according to ~~any one of Claims 1 through 7~~ Claim 1.

12. **(New)** The pedestrian navigation device according to Claim 7, characterized in that said direction measurement means is an electronic compass.

13. **(New)** The pedestrian navigation device according to Claim 7, characterized in that said direction measurement means is a gyrosensor.

14. **(New)** The pedestrian navigation device according to Claim 2, characterized in that said position information reception means obtains current position information from a GPS (Global Positioning System).

15. **(New)** The pedestrian navigation device according to Claim 3, characterized in that said position information reception means obtains current position information from a GPS (Global Positioning System).

16. **(New)** The pedestrian navigation device according to Claim 4, characterized in that said position information reception means obtains current position information from a GPS (Global Positioning System).

17. (New) The pedestrian navigation device according to Claim 5, characterized in that said position information reception means obtains current position information from a GPS (Global Positioning System).

18. (New) The pedestrian navigation device according to Claim 6, characterized in that said position information reception means obtains current position information from a GPS (Global Positioning System).

19. (New) The pedestrian navigation device according to Claim 7, characterized in that said position information reception means obtains current position information from a GPS (Global Positioning System).

20. (New) A program for causing a portable terminal to navigate a pedestrian route, which realizes in the portable terminal the functions of the pedestrian navigation devices according to Claim 2.

21. (New) A program for causing a portable terminal to navigate a pedestrian route, which realizes in the portable terminal the functions of the pedestrian navigation devices according to Claim 3.

22. (New) A program for causing a portable terminal to navigate a pedestrian route, which realizes in the portable terminal the functions of the pedestrian navigation devices according to Claim 4.

23. (New) A program for causing a portable terminal to navigate a pedestrian route, which realizes in the portable terminal the functions of the pedestrian navigation devices according to Claim 5.

24. (New) A program for causing a portable terminal to navigate a pedestrian route, which realizes in the portable terminal the functions of the pedestrian navigation devices according to Claim 6.

25. (New) A program for causing a portable terminal to navigate a pedestrian route, which realizes in the portable terminal the functions of the pedestrian navigation devices according to Claim 7.